

AN APPENDIX  
TO  
AN INQUIRY  
INTO  
THE NATURE AND PATHOLOGY  
OF  
GRANULAR DISEASE  
OF  
THE KIDNEY.

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SINCE the preceding remarks were published, the opinion of some influential members of the profession has been pronounced on the subject, and the ultimate adoption of the pathological views here advocated has been rendered probable. I may avail myself of this opportunity to make one or two observations on a point connected with the morbid anatomy of the kidney; but my chief motive for appending these few lines is to direct attention to a very important indication in the treatment of the more advanced stages of the disease—one which has been rather unaccountably neglected.

My friend, Mr. Bowman, of King's College, in a most talented memoir read before the Royal Society, and published in the Philosophical Transactions, has given a new description of the structure of the Malpighian bodies of the kidney, which to a certain extent reconciles the discrepant statements of other anatomists. Through his kindness I have seen the very beautiful illustrative preparations which he possesses, and they certainly correspond precisely with his account of the dis-

position of the vessels. He states it as his opinion that the true Malpighian bodies are not identical with the granules present in certain forms of nephritis. At the time I suggested the probability of this identity, I was of course ignorant of Mr. Bowman's researches, and could therefore only reason upon such descriptions as were then deemed most accurate. These bodies were said to be visible to the naked eye. Now on examining the surface of a healthy kidney,\* I could plainly discern an immense number of distinct granules, which were still more perceptible on the congested organ, and these I have throughout (very incorrectly as it happens) considered as Malpighian bodies; for Mr. Bowman has explained that the *true* bodies are invisible on the exterior of the kidney, and that the granules seen there by the naked eye are mere lobules placed between the radicles of the renal vein. He also mentions that this lobulated appearance of the surface is most marked when the minute veins are distended with injection; and I had previously made the same observation in those organs which were congested from ligature of the renal vein.

As I have never perceived distinct granules but on the exterior of the kidney, and as an increased prominence of the lobules naturally existing in that situation can be produced by artificial distension of the minute veins, I am still inclined to consider the granular appearance of the renal surface met with in certain cases of chronic nephritis as resulting from the operation of the same cause that produces enlargement of the acini of the liver in chronic hepatitis, viz. long continued though slight congestion. In stating this opinion I by no means wish to elaim the merit of originality. For although Mr. Bowman has not in positive language described the true nature of the granules, yet (as he has shewn them *not* to be enlarged Malpighian bodies,) to him the credit of having first placed this point in a clear light must justly be assigned. His communication, therefore, independent of its value as a contribution to Physiological Anatomy, will be eventually esteemed of additional importance, from its having contributed to the elucidation of a subject respecting which much previous misconception had existed.

The explanation which I gave of the production of albuminuria, and the statement that the intensity of the congestion could be at any time determined by ascertaining the relative proportion of the albumen, have been fully confirmed by a short series of experiments published in the Medical Gazette

\* Page 2.

of the 3rd of June last. I have since extended my observations through a greater number of experiments, and have invariably noticed the same relation between the intensity of the congestion and the quantity of albumen in the urine. I can therefore confidently recommend that rule as affording an unerring practical test of the condition of the renal circulation, and thereby enabling us to measure the activity of our remedies, and to select such as seem most suitable to the peculiar circumstances of each case. It appears from a mention of his work in the last April number of the British and Foreign Quarterly Review, that M. Becquerel of Paris had, from a number of observations, arrived at a similar conclusion as to the cause of the low specific gravity of the urine noticed in the advanced stages of the disease, to that which my reflections on the subject induced me to adopt. He proposes to term the fluid secreted by the kidneys during an impoverished condition of the blood, by the general designation of *Anæmial* urine. The same idea having occurred to two distant individuals about the same period, may perhaps tend to increase the probability of the truth of the opinion.

The pathology and indeed the treatment of the more acute forms of nephritis, even when complicated with dropsy, seem to have been better understood by the old writers than is generally supposed. Thus Bonetus in his *Sepulchretum* devotes a whole chapter to, and relates several interesting cases of, dropsy arising from diseased kidneys. Among other cases of dropsy he mentions\* one of a nobleman, who, after suffering from rheumatism for a number of years, at length died comatose "*leniter et quasi per somnum exspiravit.*" He adds "*Renes flaccidi et quod notabile adeo parvi ut magnitudinem nucis juglandi vix æquarint.*" † Another case is that of a youth who died from dropsy and suppression of urine, and in whom the left kidney was very much wasted "*valde consumptus,*" the right being obstructed by calculi. In the following passage‡ he not only notices the connection between dropsy and renal disease, but points distinctly to the propriety of directing the treatment to the relief of the local disease. "*Notandum sæpissime sine vitio hepatis, ex imbecillitate renum non attrahentium serum, hydropem produci. Nec ullis diureticis, etiam generosis, vias istas aperiri posse. Idcoque expurgandis istis*

\* Theophilus Bonetus. *Sepulchretum*. Genevæ, 1679. Tom. 2, p. 1073, observation 8th.

† Ibid. Page 1075.

‡ Page 1076.



partibus et vicinis imprimis elaborandum; atque etiam fomentis facultatem perditam restituere conandum. An ferrum acutissimum ad renem aliquem adigendum, ut via detur sero stagnanti intra venas majores, si nequeas per cathartica hydragoga exhaustire?" He speaks in another page\* of "Ischuria venarum sectione sanata, ab obstructione vasorum emulgentium sanguine distentorum." These observations of the older physicians cannot of course lessen the value of the knowledge acquired by the labours of modern enquirers, as they are evidently imperfect, and so mixed up with error as to be unfit for practical application till verified by fresh researches.

In the earlier stages and more acute forms of nephritis, the propriety of making the removal of the local disease the chief object of the treatment is unquestionable, and on that head I have no further observations to add. But the want of success attending the ordinary mode of treatment of the advanced stages of the disease is most marked and lamentable. The regimen and remedies employed, being chiefly of an antiphlogistic nature, increase and render permanent the debility. There is not sufficient energy in the system to keep up an active cutaneous circulation, by which alone the secreting function of the kidneys can be relieved without detriment to the rest of the body. And the tenuity of the blood becomes so much increased by the substitution of water for the albumen lost in the urine, that its thinner portion continually oozes into the various cavities, and thus assists materially in shortening the duration of life. Under these circumstances, therefore, it is to be hoped that any reasonable suggestion, which is based upon well ascertained facts, and is supported by the results of experience in analogous cases, will not be refused a fair and impartial trial.

The peculiarities of this stage have been before alluded to. They consist chiefly in the supervention of various dropsical disorders and serous evacuations, and in the great debility and progressive exhaustion of the vital powers. Now from a careful consideration of all the phenomena of the disease, and more particularly of the facts to which I am about to refer, I am fully convinced that a large proportion of these complications and disorders arise solely from the impoverished condition of the blood, and can only be removed by restoring that vital fluid to something like its healthy composition. On chemical analysis the quantity of albuminous matter contained in the blood drawn in chronic nephritis has been found much below

\* Page 1225.

that of healthy blood; and Dr. Christison in one instance\* could only obtain 427 parts of hæmatosine in 10,000 of blood, the healthy proportion being nearer 1200 parts in 10,000: so that the existence of an impoverished condition of the blood is indisputable.

If the symptoms of the advanced stage of the disease be compared with those of simple anæmia, the resemblance is very striking. In both, the same bloodless appearance of the surface, a tendency to exhaustion from slight fatigue, œdema of the countenance and of the extremities, and an accumulation of water in the serous cavities without any increased vascularity of the membranes, are observed.† In short it is pretty clear that a continued and protracted discharge of albumen will produce the same deterioration of the blood and give rise to the same symptoms that result from repeated small losses of blood.‡

A state of idiopathic anæmia, arising from some defect in the progress of sanguification, such as that existing in chlorosis, is not unfrequently met with. Dr. Copland§ quotes some cases of simple anæmia from Chomel, in which from the examination of one man who died exsanguined, the true nature of the disease was discovered, and the other individuals were saved by the administration of iron and tonics. The beneficial effects attending the internal use of chalybeates are also daily seen in chlorosis and other anæmial affections. Now why should not some degree of benefit be experienced from the employment of those remedies in the analogous condition of the system present in the advanced stages of Dr. Bright's disease. It seems to me that the treatment of those stages should be based upon two indications—the restoration of the blood as near as possible to its healthy composition, and its equal and impartial distribution throughout the whole system. The latter point alone seems to have engaged much attention, and though in the earlier stages of disease it is undoubtedly of primary importance, yet in the opposite class of cases, I think I am supported by general experience in saying, that an attention to it alone will not suffice to cure, or in any marked degree, to alleviate the disease.

\* That of a boy in the advanced stage of the disease; in other instances the decrease was less, but in all the cases it was more or less marked.

† The low specific gravity of the urine is another symptom of anæmia.

‡ See Dr. Copland's Dictionary, p. 177, on the injurious effects produced by small but often repeated loss of blood.

§ Ibid. p. 173.

The case differs from one of mere anæmia, in as much as there exists a tendency to inflammation of an important organ. To lessen the congestion of, and diminish the supply of blood to, the kidney, local blood-letting, counter-irritation, and cutaneous derivation, are therefore very properly employed, and their use may be advantageously continued during the attempt at improving the quality of the blood.

Something like the following plan of treatment would from *à priori* reasoning seem to promise more benefit in those cases :—To place the patient on plain but nutritious diet, selecting such articles of food as are most easily digested, and perhaps those which contain but a small proportion of water, allowing as much as the appetite seemed to desire. If on examination the urine contained but a small proportion of albumen, some preparation of iron might be given. A combination like that of the *mist. ferri co.* would seem best suited for the case, as the junction of aromatics would tend to increase the tone of the digestive organs. The urine should be frequently tested, and if there were any relapse or increase of the congestion, the use of the tonics might be intermitted till the tendency to irregular distribution of blood was removed by the use of derivatives, local depletion, and similar means. Where irritability of the stomach existed, that impediment to nutrition might be first treated, or if it continued, some sedative might be added as a corrigent to the tonic medicine. The administration of iron will alone suffice in simple anæmia for the restoration of an active cutaneous circulation, for during its use red vessels appear in the surface which were before invisible. In promoting the flow of blood to the skin in debilitated patients, friction, warm clothing, and stimulating liniments, would seem indicated rather than the frequent use of the warm bath, as the latter would tend to increase the debility.

How far these views will be confirmed by the results of practice is yet to be seen. In offering them without the proofs of their accuracy which a series of successful cases would furnish, I may be deemed rash and perhaps presumptuous. But as I might wait some time for an opportunity of personally testing their truth, it seems to me almost an act of duty to lay my reasons for holding the opinion before those who are enabled at once to try the suggestion and pronounce an early judgment on its merits.

35, *Hunter-street, Brunswick-square,*  
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